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COVER PHOTO:

Magnolia Sieboldii

PHOTO BY B. O. MULLIGAN

A Professional Horticultural Exploration of England and Scotland

PART III

J. A. Witt

June 14

We left the hotel about 9:00 a.m. and under the guidance of Mr. Powell, our courier, took a tour of downtown London. Our coach was rather large and many of the winding lanes we went through were rather small, but John Hogan, our driver, was skillful and we negotiated the streets without destroying any priceless monuments. The tour, all too short, ended at Vincent Square for a visit to the Royal Horticultural Society's fortnightly show. Horticulture Hall was a large building with an exhibit room having a high ceiling which was nearly filled with long rows of tables on which were massed an amazing variety of plants. There were delphiniums in force, banks of geraniums, loads of lilies and a superlative collection of cactus and succulents. Our hosts of the day before, Brighton Parks, had a brilliant display of Bougainvillea which I later learned won a gold medal. Trees and shrubs were in short supply and those exhibited were of common types—this was to be expected, however, because of the late date. Two other displays drew my attention, however. The Alpine Garden Society had two long tables jammed with alpines of all types, shapes, and descriptions. These were growing in pots and exhibited a really high degree of culture. There were many saxifrages, lewisias, campanulas, a few dwarf conifers, and rhododendrons, and several genera that I had never seen before. The other display was put on by the Lily Society and consisted of the largest collection of flowering *Allium* (onions) that could be imagined. I had never realized what a diverse group they were, nor how striking some of the taller species were.

The hall was crowded with men and women, young and old all obviously most interested and many commenting learnedly on the displays, and this was Tuesday—not a weekend.

Our much too brief stay ended when we were called back to the coach about 12:30 p.m. and fought our way across London to Regents Park and the Queen Mary Rose Gardens. Lunched there and then spent about two hours in the bright sunshine looking at the roses. Frankly, the rose is not my favorite flower and I soon get bored with them, especially the newer developments, but I did enjoy their brilliance of color and the attractive way the beds were arranged and maintained. The roses were planted in blocks of a single clone—sometimes fifty or more in variously shaped beds along walks and paths. All was neat and tidy and the gardens were full of people mannerly and interested.

By three we were back on the coach and went bounding across London again out into the beautiful soft green rolling countryside through Reading, Basinstoke, and finally to Winchester and the lovely new Wessex Hotel where our room looked out on the close of the old Norman cathedral. The hotel was a most fascinating building, very modern yet retaining the feeling of the ancient cathedral next door and of the still older Roman occupation.

June 15

A real highlight today. We met Mr. Harold Hillier and his son at one of their nurseries near Winchester and spent the day with them. The firm of Hillier & Sons probably have the largest tree and shrub collection in the world, at least as far as diversity of species and forms go. Our first stop was in their propagating nursery, a small area with a most concentrated collection of fine plants growing around the propagating houses. Many of the older

specimens date back to the 1880's, to Mr. Hillier's grandfather. They raise a vast number of seedlings in their greenhouses, which surprised me somewhat since I had thought that vegetative propagation would be more useful to a nursery doing their volume of business. They also seem to be able to grow a number of more or less tender species that we lose—things such as evergreen oaks and *Arbutus* species—despite the fact that our temperature ranges are nearly the same. They do have walls, however, which must shelter the tender things.

In the afternoon we visited the Hillier home, a fine large house surrounded by an Arboretum. Mr. Hillier was in very fine form here—with stick in hand he led our panting horticulturists through a fabulous plantation of woody plants. Each tree was pointed out, named, and often a short history given. Mr. Hillier never missed a beat. The performance was so exhilerating that I was emotionally worn out by the end of the four-hour tour. When we left I saw the Hilliers greeting another group—touring German nurserymen. What stamina!

We fortunately had a few hours to visit Winchester cathedral, an experience of a totally different kind but also emotionally stimulating. There was considerable archaeological activity in the area and we saw several "digs" in progress—one on the cathedral grounds uncovering an ancient Saxon cemetery.

June 16

Left Winchester and the Wessex Hotel regretfully since most of our group felt that we had only touched the surface of this section of England. It was cloudy as we drove northeast of London into Berkshire for a stop at Quarry Wood, the garden of Mr. and Mrs. Martin Simmons. By the time our group had unloaded and started our tour of this lovely garden a fine mist began to fall, not enough to be bothersome, but enough to discourage looking into the woodland areas which were full of rhododendrons. Mrs. Simmons is a lily enthusiast and has visited the northwest on several occasions. Their garden was about 20 acres of woodland with a very fine collection of exotics including a plant of *Eucryhia milliganii* in flower—the first I've seen. Much of the area was devoted to large old rhododendrons growing under the shelter of the tall trees. At the foot of a steep bank there was a peat wall, fairly recent I think, with many *Gaultheria Primula, Meconopsis* and other acid-loving genera. One very interesting feature was the alpine beds; they were converted cucumber frames filled with a scree mixture in which the plants were growing. By 1:00 p.m. the mist had thickened to a real downpour. This not only curtailed our visiting in the garden but put a distinct blight on the lunch which had been planned for the Simmons' spacious and beautiful lawn. The gentlemen ate in a small gazebo, the ladies drip-dried in the drawing room while Mr. and Mrs. Simmons shuttled back and forth in the rain, a sterling example of hostmanship.

The showers had stopped and the sun came out as we left Quarry Wood for the next stage of our trip up the valley of the Thames river. Wonderful green lush scenery, freshened by the rain, made this a very pleasant drive. Stopped at a school for training park administrators near Basildon and thence on via some back roads where the coach just filled the lane. Fortunately the only traffic we met was an occasional tractor that was able to scurry for cover. After a brief period of bewilderment we finally found our destination. Waterperry Horticultural School for Women at Wheatly near Oxford. This institution is located on an old estate with the main building serving as offices and living quarters for the 32 girls who get their training there. They offer a two-year course in all phases of horticulture and obviously stress practical work. There were large vegetable gardens, cut-flower gardens, rock gardens and greenhouses, all expertly cared for and the grounds were manicured—the work done by the students. Miss Havergal, the principal, was kind enough to show our party

through the school and she was accompanied by Miss Valery Finnis, a keen alpine gardener and photographer extraordinary. Our evening stop was a motel near Oxford—so American it could have been on the outskirts of Seattle. After dinner a few of us under the guidance of Mr. Powell made a dash through some of the various colleges that make up Oxford University. After dark really isn't the best time to do this sort of touring. The town was alive with students; various colleges were having end-of-term functions and generally things were in a wild uproar. I shall never again think of Oxford as a quiet haven of peace and study—quite the contrary, I'm afraid.

June 17

Our day began with mist again as the coach took us somewhat northeast to Ascot, the estate of Mr. and Mrs. Anthony de Rothschild. Mr. Yoeman, the head gardener, took us through the grounds but the rain persisted and took some of the joy out of seeing a truly grand garden in more or less formal style. There were vast lawns with box hedges, beautiful old trees, and a topiary sundial of clipped golden yew and privet (which wasn't operating). Leaving Ascot some hours ahead of schedule we headed toward Hoddesdon and the Rochford Nursery. The Rochford family have some thirty acres under glass and produce a wide range of house plants. I was impressed with the efficiency of their "house plant factory" as one of our group called it, but my interests are not in the greenhouse so I soon saw all I wanted. Besides, the day was muggy and hot, morning showers had given way to afternoon thunder storms, and the glass houses were very warm. I was glad when we left and started toward Bury St. Edmonds and the old Angel Hotel where we found Charles Dickens had preceded us—by about a hundred and fifty years. Had time before dark to visit the ruins of a Saxon and Norman abbey now surrounded by an attractive park. The evening we spent in prowling about this market town finally ending up in what was reputed to be the smallest pub in England. It was large enough to hold about six of us, two or three locals and the proprietor. We just had to be careful not to lift our glasses at the same time.

June 18

An early start took us northeast to Diss and Alan Bloom's Bressingham Nursery. Mr. Bloom is one of the chief growers of herbaceous perennials in the British Isles and his display gardens are very well laid out. He uses island beds rather than the more common herbaceous border and I felt they were very effective. Interspersed with the mass of perennials were some choice trees and shrubs and a few fine dwarf conifers. After spending an hour or so in the display garden Mr. Bloom took us to see his collection of steam engines of which he had some fifteen or more and in which he obviously took great pride. His nursery proper was very well managed, the small plants neatly lined out in small pots or plastic plant bands, growing in blocks of hundreds in the open or in frames.

We returned to Bury St. Edmonds for lunch, then drove west to Cambridge and the University of Cambridge Botanic Garden. I had had the pleasure of meeting its director, John Gilmour, earlier in the spring and found him most cordial. Time was pressing again and we were forced to visit his garden in less than three hours when we should have spent a day there as a minimum.

Cambridge receives only 20 inches of rain a year and the soil is chalk, so plants were not as lush as some we had seen, but the variety was wide. There was a fine range of greenhouses with a main axis from which smaller houses were built at right angles. The bays between the smaller houses were warm and sunny and gave a place to plant the more tender species. Two rock gardens, one of limestone the other of sandstone, were full of flowering plants but there was little flower elsewhere. The synoptic area, that section in which plants were grown in their botanical order, proved to be a de-

parture from the ordinary straight line and orderly bed approach. The families grouped were in free-form island beds; could this have been some of Alan Bloom's influence? The most interesting aspect of the Cambridge botanic garden, however, was their interest in ecology. Several sections were devoted to this approach including a hydrosere where the deepwater of a pond gave way to shallow water, pond edge and marsh beyond, all planted to show the proper succession of plant life and with a lucid description of the process.

Mr. Gilmour then kindly took us on a short tour of some of the colleges that make up the University. Its lovely old buildings had an air of permanence and stability that we could feel even in our flying visit. Oh yes, we saw the apple tree that Sir Isaac Newton was reputed to have been sitting under when the concept of gravity occurred to him. It still had green apples on it.

Late in the afternoon we again resumed our northward journey and arrived tired and hungry at the Great Northern hotel in Peterborough, one of the famous railroad hotels of rural England. Fortunately, there were few trains running so we had a quiet night.

June 19

Today proved to be a little less hectic and very interesting if not especially horticulturally exciting. Our courier, Mr. Rupert Powell, was doing his best to fill us in on English customs and culture with a bit of history thrown in. We had an open morning ahead since we were not expected in Nottingham before early afternoon and the distance was not very great. Rather than spend the morning in Peterborough Mr. Powell arranged for us to visit a small village, Hough - on - the - Hill, (pronounced Huff) where he had a close friend, the vicar of several churches in the area. We had lunch of sandwiches and beer in the local pub, a wonderful old building with a veritable rabbit warren of rooms.

The road north to Nottingham took us through the fens, ancient marsh-lands now drained and seemingly very fertile but flatter and more open than that further south. Nottingham, despite its connotation of Robin Hood sheriffs and forests, was a thriving industrial city on the edge of industrial England and surprisingly enough a very great rose-growing center. We first visited the Gregory and Sons Nursery and Show Garden and were taken in by the Gregorys en mass. There seemed to be about as many of them as of us and we had a wonderful social time. We even had a tractor ride through their huge fields of roses. Perhaps as an anticlimax there were practically none in flower. I really didn't care. We went to visit their friends and competitors, Harry Wheatcroft and Sons, who did have flowering plants since they had large glass houses to grow some in. Both nurseries are big, big business but both seemed to retain the feeling of being operated by real plantsmen. Mr. Wheatcroft had us for tea where we saw some of his really fine new introductions. His garden was brilliant and his champagne was equally so.

Dinner in our hotel was with the Wheatcrofts and Gregorys and then to the Road to Jerusalem, what may be the oldest pub in Great Britain, with one of the Gregory sons and another after-dark tour of a University, the University of Nottingham.

June 20

Back to the University, in daylight this time, to see the Lenton Experiment Station, a testing center for Boots Chemists, a very large pharmaceutical and agricultural chemical firm. This station was largely a preliminary testing grounds for new agricultural sprays, herbacides, etc. before they were tried on large scale field trials elsewhere.

We lunched in the Boots canteen then left Nottingham for a long ride through the edge of the so-called black belt of industrial England. The contrast between the rather drab landscape here and the clean greens

(Continued on Page 41)

Subalpine Larch
Larix Lyallii Parl.

C. Frank Brockman

This interesting conifer is one of the least known of native trees of the Pacific Northwest for it occurs only in widely scattered places at timberline. In Washington it occurs in the North Cascades, extending southward to the Mount Stewart region. Eastward it may be found in the northern Rockies of eastern British Columbia and western Alberta, western Montana and the Bitterroot Mountains of northern Idaho. Though it is familiar to relatively few people because of the rugged, widely dispersed, inhospitable places which it inhabits one can make its acquaintance with minimum difficulty. This is accomplished by taking the steep, winding road to Hart's Pass from the upper end of the Methow Valley. Here, in the region of a small but pleasant U. S. Forest Service campground, one finds many of these trees which add interest to the scenic grandeur of the area, including a distant view of Mount Baker from the east.

Except for certain details the subalpine larch bears a resemblance to the more fa-

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*Another of Prof. Brockman's very interesting tree series.

Larix Lyallii, Okanogan Co., Wash. Insert—Coning branches.
Fig. 8—Photo by B. O. Mulligan.

miliar western larch (*L. occidentalis*) which inhabits lower elevations in the same general region. As befits a tree of the "high Country" it usually exhibits a ragged, scraggly form which often shows the effects of high winds and the extreme climatic conditions which it must endure. It rarely attains a height of more than 25 to 50 feet and a diameter of 1 to 2 feet and its branches are generally short and stout. However, the side branchlets exhibit a similar pendant character typical of its larger and better known relative of the lower elevations. New twigs of the current year are characterized by the presence of white wooly pubescense which not infrequently catches the dew of foggy mornings, giving the twigs an irridescent appearance in the first rays of the early alpine sun. Individual needles are somewhat four-angled and like the western larch are 1 to 1 1/2 inches long, deciduous and occur in dense brush-like clusters from short spur shoots on the branches. Winter, of course, finds these trees bare of foliage, but their stark, lifeless appearance in winter gives way in spring to the soft green of new needles which turn brilliant golden yellow in fall. Thus, in fall the subalpine larch adds a golden glow to the expansive beauty of subalpine meadows and nearby timberline crags.

Though the subalpine larch is much smaller in stature than the western larch its cones are larger, being up to 2 inches long, with long conspicuous bracts extending from between the scales. Like those of the western larch they stand erect and often remain on the branches for a year or more after maturity. Only three species of larch are indigenous to North America. Two species—subalpine and western larch—occur in the Pacific Northwest; the third, eastern larch or tamarack (*L. laricina*) is transcontinental in range, occurring from New England and the Lake States, northwestward across Canada to Alaska.

Planting Along Washington Highways

R. M. Blanchard*

The concept and emphasis of adding trees, shrubs and ground cover plants to our roadside has undergone considerable change through the past few years. Once thought of primarily as an added ornamental feature to provide color and beauty to our roadsides, these plantings have since taken on a practical, utilitarian aspect where the ornamental value is often a secondary consideration. Plantings at this time are designed to accomplish such unornamental tasks as sound barriers, headlight glare screens, traffic delineators, crash barriers, erosion control, and a variety of other practical functions. No one complains if the plants utilized have an ornamental value as well as meeting the requirements of the practical application.

The design of highway plantings and the selection of plant material is only one step in the highway landscape development program which begins in the early stages of highway route selection. Landscape consideration extends from the manipulation of alignment to fit the topography, to the consevation of natural features during construction, reaching the final stage of development with the planting project designed to augment the existing vegetation and provide a transition from the constructed facility to the surrounding environment, as well as serving the functions mentioned.

Planting design will vary between rural and urban areas and within the controls of climatic conditions and soil requirements. Urban planting is characterized by large mass plantings utilizing all available space not required by roadway lanes. Roadside

*Mr. Blanchard is Landscape Architect for the State Highway Department.

plantings in urban areas, while informal in character, make wider use of ground covers, shrubs and trees as contrasted to rural plantings that are predominately informal groupings of tree and large shrubs.

The arrangement or design of plantings in either the urban or rural situation tends to be informal, creating a transition from one condition to the next, utilizing variations in side slopes, median widths, drainage ways and structures. The informality is a relief to strict engineered features which accents uniformity and parallelism created by pavement edge, lane striping and guard rails. Plant material irregular in outline and informally placed heightens interest and adds to the beauty of the structural elements.

Speed and movement of the vehicle and observer creates a new dimension to the roadsides as each turn in the highway unfolds a new and ever changing scene to the motorist.

Informality and continuity of planting is essential and complementary to the pure engineered lines when viewed in motion.

Along our urban freeways, large simple masses of low spreading ground cover plants or shrubs are utilized to provide a continuity and free flowing form to the planting. Ground cover plants or low shrubs also when established reduce maintenance and eliminates mowing on steep slopes. Such plants are also beneficial where sight distance must not be impaired. Taller growing shrubs provide an intermediate height dimension to the plantings and function also as headlight screens, crash barriers and traffic delineators. Larger trees, both deciduous and evergreen, are essential for the element of scale when utilized in relationship to large structures and walls. The larger trees also provide the bulk and mass to accomplish screening and sound barriers to and from the facility.

Urban freeway plantings now under construction in our metropolitan areas are much larger in scale by far than any planting projects undertaken to date. Single varities of shrubs required on any one project often exceed 1,000 in number and it is not uncommon for the quantity of ground cover plants to reach and exceed 50,000 per project. With plant quantities such as these, it becomes a major problem for the industry to supply plant materials for several projects in progress simultaneously. To overcome this difficulty, all of our planting projects extend over a two to three year period which allows the contractor sufficient time to accumulate or grow material to the size specified. In selecting plant material for urban conditions, the utilitarian function is considered along with tolerance to local growing conditions. A plant such as Japanese Rose is a vigorous grower and tolerant of urban freeway conditions which makes it quite well suited for crash barriers and headlight screen. Bearberry, English Ivy and varieties of Cotoneaster do well in the poor soil and on hot exposed slopes of the freeways.

Conifers such as Shore Pine, Austrian Pine, Douglas Fir, Falsecypress, Hemlock and others serve as effective sound and visual screens. Some of these species are not as tolerant of air pollution and insects as one might wish. Among the deciduous trees utilized for contrast, scale and transition, we are selecting varieties of Maples

(*Continued on Page 44*)

New planting of Freeway slopes—Douglas Fir, Lowfast Cotoneaster and Firethorn on upper slope.
Fig. 9—Photo: Courtesy Highway Department.

"Lighten the Corner" Where You Grow Rhododendrons

Marjorie Baird*

Many of us who enjoy the great variety of evergreen shrubs adapable or native to the northwest overlook the fact that the lightening effect of deciduous material vastly increases the interest of a garden. In the winter you may observe the charming pictures created by shining wet branches and crystal-hung twigs, snow-tufted clusters of seed pods or a bird's nest. Above all, you will feel the airiness provided by these shrubs without leaves.

The rhododendron collector, especially, forgets there is "anything else" for his garden, but planting a few interestingly-branched small trees or separating incompatible leaf shapes or textures with a group of deciduous plants is very pleasing to the eye.

Any of the azaleas in the Canadense, Luteum or Schlippenbachii Subseries are desirable and provide a wide range of color, flowering time and size from which to choose. The semi-deciduous *R. kaempferi*, with coral flowers opening in April is a good companion for the lower evergreen azaleas which bloom later. The Ghent hybrids include some lovely yellows and apricots which blend well with the creamy yellows of R. "Butterfly," R. "Harvest Moon," R. "Zuiderzee," or R. "Devonshire Cream." The Knap Hill hybrids are later-blooming and larger-flowering with a myriad of gorgeous colors, the more intense for accent, the paler for transition and back-ground.

The deciduous *R. mucronulatum* planted with *R. pemakoense*, R. "Rose Elf", Springwood White or Pink heather and a drift of the bright blue *Scilla siberica* gives a spot of color from mid-January to mid-April and can be used as a large or small garden grouping.

Here are some examples of interesting deciduous associates:

Rhus typhina (Staghorn Sumac) is a dramatic tree averaging 20' with brilliant fall color and annoying root shoots. A sun-loving group may be composed by planting it with R. Broughtonii Aureum, *R. luteum*, Mugho pines, *Mahonia aquifolium* or *M. nervosa*, *Arcto-staphylos uva-ursi* or *A. media*.

Oxydendrum arboreum (Sour Wood), an eastern U. S. native, eventually attains quite a height in a moist location. Its late summer flowers and lovely fall color make it desirable. Its leaf shape associates well with the taller Triflorums, such as *R. augustinii* and *R. yunnanense*.

The Stewartias (*S. pseudo-camellia, koreana*, etc.) are summer-blooming and color well in the fall. Their leaves are not large and are veined, giving a slightly rough appearance which associates well with this type of leaf in rhododendrons; i.e.-*R. bureauvii*, *R. griersonianum*, R. "Ibex, R. "Etta Burroughs", R. "Arthur Osborn". The bark is smooth but peels off in flakes, giving an interesting bi-colored appearance. But most beautiful of all its attributes is its distinctive branching pattern. The branches slope upward rather sharply and the twigs are arranged in two opposite ranks, also at acute angles to the branch, but in a graceful spiral.

Cornus florida, the Eastern Dogwood, is a delightful small tree with its 4-lobed white bracts usually appearing in May. This, and its oriental cousin, *Cornus kousa*, are amenable to planting with almost any medium or small rhodendron. You might repeat the white with May-flowering white evergreen azaleas. *C. kousa*, and its va-

*Compiled from a lecture given for the Horticultural Class of the Seattle Garden Club. Mrs. (Hugh) Baird kindly referred to her notes to bring us this interesting discussion.

riety *C. k. chinensis* have the added bonus of soft coral-red leaves in the fall.

Cornus florida rubra is not as easy because of its odd brownish-pink color. If your garden is warm enough, try the evergreen azalea "Mrs. Fischer". Of course, the whites and blues combine well with it.

If yours is a woodland garden with the trend to natives, bring in *Osmaronia cerasiformis* (Indian Plum or OsoBerry). It is a graceful small tree in the partial shade, very early-flowering and *R. macrophyllum* would be pleased with its proximity. In a little more sun you might use it with R. "Oregon Queen", a hybrid of *R. macrophyllum* and *R. occidentale.*

Franklinia alatamaha usually attains a height of 30', but does not like too much exposure to cold winds. Its beautiful white flowers open in late summer and fall as the leaves turn to gold and crimson. Its bark is dark and branching habit simple and uncluttered, making a good foil for the light green-leaved rhododendrons such as R. "Britannia" and R. "Loder's White".

Our native Vine Maple (*Acer circinatum*) and the Japanese Maples (*Acer palmatum* and varieties) are "naturals" for medium-sized and small rhododendrons and azaleas. *A. palmatum* does not like to be too dry in the summer, so beware of too much late summer water near your rhododendrons. The red-leaved varieties are beautiful companions for the blues and lavenders, such as *R. impeditum,* R. "Sapphire", R. "Ilam Violet", R. "Mood Indigo", etc.; also the pinks and roses. With the lovely light green-leaved ones and our Vine Maple the yellows are especially pleasing- i.e.- *R. hanceanum 'Nanum', R. brachyanthum var. hypolepidotum,* R. "Golden Folly", R. "Ostbo's Low Yellow", R. "Marcia", R. "Crest", R. "Virginia Scott".

An ideal pair is *Cydonia oblonga,* the orchard Quince, and R. "Mrs. A. T. de la Mare". The soft pink of the rhododendron buds and the quince flowers usually appears at the same time. The silvery soft new leaves of the quince, with its dark smooth bark, enhance the beauty of the expanding and whitening trusses.

The fragrant white lax-petalled flowers of *Magnolia Stellata* are usually over before any of my choice of rhodondendron companions bloom, but no matter, for the smooth grey bark and bold branching habit is most atractive, especially if aided by pruning scissors. The blue-green-leaved rhododendrons are especially nice with this small tree. Mr. Lem's hybrid of R. (*lacteum* x "Mary Swathling") x *discolor* also has a touch of violet on the petioles and soft pink flowers. To complete the picture, underplant with our native prostrate juniper, *J. communis saxatilis.*

Corylus avellana 'Contorta', the Corkscrew Filbert, is at its best in early spring, with its "scriggly" branches hung with long chartreuse catkins. It is primarily a specimen plant and should be accented before the leaves unfold, as their wilted-looking folds cover the curvy branch pattern. A group of the early brilliant red R. "Blood Ruby", a low compact *R. repens* hybrid, would do well here, or the soft yellow, round-leaved R. "Moonstone" or "Cowslip".

Hamamelis mollis perfumes the air of the winter garden but its small yellow flowers are no match for a rhododendron. Its interesting habit of growth, however, will provide a good accompaniment for the later blooming R. "Goldsworth Yellow" or "Mrs. Betty Robertson".

Corylopsis spicata is also of early interest with pendant yellow flowers, and because of its rather coarse-textured leaves, should be the consort of some of the bold-leaved rhododendrons.

Viburnum fragrans or *V. bodnantense 'Dawn'* have a stiffish upright growth but would pair well with the dull-leaved early R. "Rosamundi" or the later R. "Jock", all quite sun-tolerant.

A sunny narrow planting bed against a fence or a wall could be made attractive by an espaliered pink or rose-flowered Japanese Quince, *Chaenomeles japonica* under planted with R. "Cutie", an award form of *R. calostrotum.*

Hydrangea petiolaris likes a little shade in which to climb a tree, fence or large rocks. With its reddish-brown bark it would be quite compatible with the yellow-green leaves and yellow flowers of R. "Gold Mohur" or perhaps the more ovate leaf of *R. campylocarpum*.

Enkianthus species are a general favorite. *R. campanulatus* has hanging clusters of yellow rose-striped bells. *E. cernuus rubens* has bells of a pretty dull red, and *E. perulatus* is white-flowered. All have a lovely branching habit, especially in partial shade. Plant one with your choicest small-leaved species or hybrid, no matter what the color or blooming time.

Vaccinium ovalifolium and *V. parvifolium* are our native "huckleberry" or "Whortleberry" of higher and lower altitudes, respectively. The beautiful soft green rounded leaves, green 4-angled branchlets and interesting growth habit would lighten a planting of *R. Wardii, R. souliei,* or *R. thomsonii*. They would enjoy being planted on a rotting log or low stump.

A lovely small deciduous shrub is Menziesia. Our native is *M. ferruginea. M. purpurea,* however, is showier with soft hairs on leaves and petioles and glaucous plum-colored pendant flowers. *M. ciliicalyx* is greenish-white and purplish. They grow to from 4 to 6' and bloom in late April, preferrably in partial shade. They would be in scale with a group of the small leaved species such as *R. keleticum, R. radicans, R. cepthalanthum var. crebreflorum,* etc.

Simultaneous flowering has not been the goal in these groupings. The main objective, I repeat, is the relief from heaviness or monotony that bare branches bring in the dull days of winter. Keep in mind that when these deciduous shrubs are clothed with leaves they must be in harmony with their rhododendron companions, so use the large-leaved ones with care, and be aware of leaf texture, color and shape.

Some Thoughts on Propagation of Softwood Cuttings

Dirk Van Klaveren*

IN the Pacific Northwest where climate permits cultivation of a wide variety of vegetative material, green-thumbers abound. It is natural then that a large percentage of questions referred to the propagator of the University of Washington Arboretum should pertain to propagation techniques. For this reason these comments are submitted with the hope that they will entice a novice to try his luck and encourage those who have already been bitten by the propagation bug! This article will confine itself to softwood cuttings with an emphasis on rhododendrons. Future articles will deal with hardwood cuttings and grafting techniques.

One of the most important prerequisites of successful propagation by cuttings depends upon the material to be used. In collecting softwood cuttings, the parent plant from which the cuttings are taken must be of good health. If it is weak or diseased, failure is almost certain. The condition of the new growth is also important. One of the best guides is that the cutting snap clean across instead of bending. If it bends, it is too old. The best time to collect cuttings is in the morning. The cutting must be dry, however; that is, the dew must have evaporated from the plant itself. The cuttings are placed in a damp plastic bag and then should be inserted in the rooting medium as soon as possible so that they will not wilt.

The container for the rooting material need not be elaborate. An azalea pot with some broken pots in the bottom for drainage makes an effective container for a small quantity of cuttings. A small shallow cedar box may be used for larger quantities of

*Mr. Van Klaveren is Propagator in the Arboretum Greenhouse. We are happy to report he has promised us a further article on hardwood cuttings.

cuttings. The container is filled with sand fine enough to retain moisture around the cuttings but coarse enough to allow water to drain through it freely. Sand such as builders use is most suitable. It should be free from organic matters and salts.

The cuttings are made two inches to six inches long with at least one green leaf to carry on the process of food manufacturing. The length of the cutting will depend upon the type of material being used. In most cases it is customary to cut under a node although this is not always necessary. In fact, many softwood cuttings root from any point below the ground, but it is considered a good custom to cut under a node. Some cuttings require a slight wound at the base of the stem. This is done by cutting the outer cortex tisue one-half to one inch long stopping one-fourth inch from the base of the cutting. This will prevent curling of the tissues when the cutting is inserted in the rooting medium. The cutting may then be dipped in a root-inducing material such as Hormodin or Jiffy Grow and inserted in the container.

Water is an adequate medium for some softwood cuttings. Nasturtium, oleander, impatiens and fuscia, for example, root readily in water. The stem of the cutting has the ability to absorb water and the leaf carries on the process of food manufacture. This food is transferred to where the roots should be, although the roots have not yet formed. Soon callus will form and a rooted cutting is made. However, transfer from the water to the soil is not easily made for the roots of water cuttings are very soft and do not readily transform to soil.

Because many people are interested in taking rhododendron cuttings, it is relevant to consider some special techniques pertaining to this type of vegetative material. In previous years, the technique has been to grow rhododendrons from grafting and layering rather than from cuttings. Many experiments have been made, however, and the following ten rules indicate that the present technique is most practical.

1. The cuttings will root when the wood is hardened up slightly and first flush of soft growth is over. This is termed a greenwood cutting.
2. Thin, strong cuttings are taken preferably from the lower part of the plant.
3. Cuttings with a leafbud are better than those with flowerbuds.
4. When only cuttings with flowerbuds are available, it is better to remove the flowerbuds.
5. The cuttings have to be slightly wounded.
6. A Hormone No. 3 treatment usually gives best results and also a better root system. It is good to mix the Hormodin with one part of Fungicide (Fermate or 50% Captan).
7. A liquid dip of Jiffy Grow is also suitable. Jiffy Grow may be used full strength for dipping for a period of 5 seconds. A. For hard to root cuttings, it may be advisable to use a dip first and after cuttings are prepared, an additional application of rooting tonic after a period of two weeks when an overhead treatment may be given. A diluted solution using one tablespoon to a pint of water for small-leaved plants and two to three tablespoons to a pint of water for the larger leaved rhododendrons may be used.
8. Greenhouse culture gives better results than in a frame outdoors.
9. Sometimes only callus is formed and no roots. The callus can be removed and the cutting dipped again in a root-inducing medium and re-inserted into the rooting mixture to which additional peat has been added.
10. Peat moss or peat with a little sand is recommended for rhododendron propagation.

For excellent illustrations of stem and heel cuttings and materials and times when cuttings are best taken reference is made to the booklet *Cuttings Through the Year* which is available at the Arboretum Foundation Office for $1.50.

Happy propagation!

New Magnolia Flowering in Arboretum

Brian O. Mulligan

In March 1958 we set out one plant each of *Magnolia Campbellii*, its subspecies *mollicomata*, and two of *M. Sargentiana* var. *robusta*. Three of the four were planted in the upper part of Rhododendron Glen, close to the trail leading west along the south side towards the Lookout. One *M. Sargentiana* var. *robusta* was placed on the west side of Arboretum Drive, facing the Sawyer memorial fountain. This plant had been propagated at the Arboretum early in 1952 by grafting a scion from the tree in Mr. Donald G. Graham's garden in Broadmoor, Seattle,* on to a seedling of *Magnolia Kobus;* so far this appears to be a very satisfactory stock. The other three plants had all been purchased from nurseries; the *M. Campbellii* and other *M. Sargentiana* var. *robusta* in Seattle, the subspecies *mollicomata* (a seedling plant) imported from England in 1947.

Sometime last fall we noticed that buds had formed on the *M. Sargentiana* tree, and later, early in the winter, a few were observed on *M. Campbellii.* This was an exciting and somewhat unexpected discovery, since the plants had only been nine years in their respective locations and *M. Campbellii* in particular is known to be slow in reaching maturity—as much as twenty five years when grown from seeds according to Mr. G. H. Johnstone in *Asiatic Magnolias in Cultivation* (R.H.S., London, 1955). For *M. Sargentiana* var. *robusta* he reports twelve to fourteen years froom seed to flowering; in our case it has taken fifteen years from grafting.

The developing buds were naturally watched with keen interest this spring and also the weather conditions. On March 12 and 13 we experienced minimum temperatures of 28°F. and 27°F. respectively, the lowest figures recorded thus far in 1967, and 32°F. on the 19th and 30th, but happily these had no effect on the flowers of the two magnolias which opened on the 20th and 21st, *M. Sargentiana* var. *robusta* just preceding *M. Campbellii.*

The former tree, now 24 feet tall, bore more than a hundred flowers, opening in succession for nearly three weeks. At first held up on the branches, they gradually droop and become more or less pendulous as they open widely to a diameter of about ten inches. While the inside of the flower is almost pure white, the outside is flushed rosy-lilac, especially towards the base. It is not a very definite or telling color and perhaps the tree could be criticized on this point, but the total effect of these many huge flowers suspended on leafless branches, against a dark background of evergreen trees, is most striking now and will be more so in the future as the tree becomes larger. There are two other specimens almost as large growing on the south side of Rhododendron Glen and in Loderi Valley, which can be expected to flower within the next year or two.

The 26 feet tall tree of *M. Campbellii,* on the other hand, only produced eleven flowers, and these were so high up that it was impossible to make a detailed description. The flowers, however, were of a bright, rich rose color, very different and much more effective than those of the former species. They are held up on the branches and do not droop, nor do the center segments of the flower open, so that it remains as an apparently closed cone surrounded by the horizontally spreading outer "tepals" as they are botanically termed. If this plant is not killed or seriously damaged by cold weather during the next few winters, as happened to all its predecessors in Nov. 1955, it should provide

(*Continued on Page 43*)

*Illustrated in *Arboretum Bulletin* XXIV, (1). Fig. 5—(Spring 1961).

State Trees

Gordon D. Marckworth

In the 1961 Spring issue of the University of Washington Arboretum Bulletin, there was included a section entitled "Some of our Favorites." Subsequently, that section has been included in each issue. While this group has not been limited to trees, trees have accounted for a majority of "Our Favorites."

We find that trees have not only been chosen favorites by individuals but states have selected their favorite tree from time to time beginning with the oak in Illinois in 1908. Eleven years later, in 1919, Texas became the second state, choosing the pecan as its official tree. Twelve years later, in 1931, Indiana selected the yellow poplar and Pennsylvania, the eastern hemlock.

The actual selection of the state tree has been accomplished in various ways, and in many states the selection has been left to the school children. In general, the official trees have been designated by action of the state legislatures. This probably accounts for the fact that while Maine has long been known as "the Pine Tree State," it did not become official until 1949 when the eastern white pine was selected.

Prior to 1937 only six states had official trees. However, by 1949 26 others had joined the throng. As of 1965, only Nebraska has no official tree although the American elm has been designated unofficially as its tree.

In 1947, Washington, by an act of the state legislature, selected western hemlock. Many people felt that Douglas fir should have been selected because of its discovery in Washington by David Douglas and its importance in the economic development of our State. In spite of pressure brought to bear on members of the legislature to select Douglas fir, western hemlock was finally their choice. As western hemlock compares favorably with Douglas fir from the aesthetic and utilitarian standpoint, its selection has been a happy choice.

From time to time the U. S. Forest Service has listed the official state trees and the latest compilation, made in 1965, is given below.

May 8, 1967

Compiled by Forest Service, U. S. Department of Agriculture, Washington, D. C. 20250 K-19—Revised 1965

State	Tree	Adopted
ALABAMA		
	southern pine (*Pinus* spp.)	1949
ALASKA		
	Sitka spruce (*Picea sitchensis* (Bong.) Carr.)	1962
ARIZONA		
	*paloverde; palo verde (*Cercidium* spp.)	1954
ARKANSAS		
	pine (*Pinus* spp.)	1939
CALIFORNIA		
	"California redwood"	1937, 1953
	*redwood; coast redwood (*Sequoia sempervirens* (D. Don) Endl.)	
	*giant sequoia; Sierra redwood (*Sequoia gigantea* (Lindl.) Decne.)	
COLORADO		
	*blue spruce; Colorado blue spruce (*Picea pungens* Engelm.)	1939 (Unofficial)
CONNECTICUT		
	white oak (*Quercus alba* L.)	1947
DELAWARE		
	American holly (*Ilex opaca* Ait.)	1939
DISTRICT OF COLUMBIA		
	scarlet oak (*Quercus coccinea* Muenchh.)	1960
FLORIDA		
	cabbage palmetto (*Sabal palmetto* (Walt.) Lodd.)	1953
GEORGIA		
	live oak (*Quercus virginiana* Mill.)	1937
HAWAII		
	kukui; candlenut (*Aleurites moluccana* (L.) Willd.)	1959
IDAHO		
	*western white pine; white pine (*Pinus monticola* Dougl.)	1935
ILLINOIS		
	*oak; native oak (*Quercus* spp.)	1908

INDIANA
*yellow-poplar; tuliptree 1931
(*Liriodendron tulipifera* L.)

IOWA
oak (*Quercus* spp.) 1961

KANSAS
cottonwood (*Populus* spp.) 1937

KENTUCKY
*yellow-poplar; tulip poplar 1956
(*Liriodendron tulipifera* L.)

LOUISIANA
*baldcypress; cypress 1963
(*Taxodium distichum* (L.) Rich.)

MAINE
*eastern white pine; white pine . . 1945
(*Pinus strobus* L.)

MARYLAND
white oak (*Quercus alba* L.) . . . 1941

MASSACHUSETTS
American elm (*Ulmus americana* L.) . 1941

MICHIGAN
eastern white pine (*Pinus strobus* L.) 1955

MINNESOTA
*red pine; Norway pine 1953
(*Pinus resinosa* Ait.)

MISSISSIPPI
*southern magnolia; magnolia . . . 1938
(*Magnolia grandiflora* L.)

MISSOURI
flowering dogwood (*Cornus florida* L.) 1955

MONTANA
ponderosa pine 1949
(*Pinus ponderosa* Laws.)

NEBRASKA
American elm . . . . . Unofficial
(*Ulmus americana* L.)

NEVADA
*singleleaf pinyon; pinon pine . . . 1953
(*Pinus monophylla* Torr. & Frem.)

NEW HAMPSHIRE
*paper birch; white birch 1947
(*Betula papyrifera* Marsh.)

NEW JERSEY
*northern red oak; red oak 1950
(*Quercus rubra* L.)

NEW MEXICO
*pinyon; nut pine or pinyon 1949
(*Pinus edulis* Engelm.)

NEW YORK
sugar maple (*Acer saccharum* Marsh.) 1956

NORTH CAROLINA
pine (*Pinus* spp.) 1963

NORTH DAKOTA
American elm (*Ulmus americana* L.) 1947

OHIO
*Ohio buckeye; buckeye 1953
(*Aesculus glabra* Willd.)

OKLAHOMA
*eastern redbud; redbud 1937
(*Cercis canadensis* L.)

OREGON
Douglas-fir 1939
(*Pseudotsuga taxifolia* (Poir.) Britton)
—scientific name given in law.

PENNSYLVANIA
*eastern hemlock; hemlock 1931
(*Tsuga canadensis* (L.) Carr.)

RHODE ISLAND
red maple (*Acer rubrum* L.) . . . 1964

SOUTH CAROLINA
*cabbage palmetto; palmetto . . . 1939
(*Sabal palmetto* (Walt.) Lodd.)

SOUTH DAKOTA
*white spruce; Black Hills spruce . . 1947
(*Picea glauca densata*)—scientific name given in law.

TENNESSEE
*yellow-poplar; tulip-poplar 1947
(*Liriodendron tulipifera* L.)

TEXAS
pecan (*Carya illinoensis* (Wangenh.) K. Koch) 1919

UTAH
blue spruce (*Picea pungens* Englem.) 1933

VERMONT
sugar maple (*Acer saccharum* Marsh.) 1949

VIRGINIA
*flowering dogwood; dogwood . . . 1956
(*Cornus florida* L.)

WASHINGTON
western hemlock 1947
(*Tsuga heterophylla* (Raf.) Sarg.)

WEST VIRGINIA
sugar maple (*Acer saccharum* Marsh.) 1949

WISCONSIN
sugar maple (*Acer saccharum* Marsh.) 1949

WYOMING
cottonwood 1947
(*Populus balsamifera* L.)—scientific name given in law.

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*Indicates common name approved by U. S. Forest Service followed by the other common name given.

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OTTO E. HOLMDAHL

After a long life dedicated to his art, Mr. Otto Holmdahl, landscape architect, designer of many of the most outstanding gardens in the northwest, is gone. He was a native of Sweden where he attended Chalmers University where he earned degrees in both naval and landscape architecture. For the past 45 years he has lived and worked in the city of Seattle.

He was well known for his large scale public plantings such as the Seattle World's Fair, the Washington State Library in Olympia, the Community Hospital in Aberdeen and work on several college campuses. Perhaps the best examples of his exceptional talent are to be found in the many fine gardens that he designed for private estates in and around Seattle. Not so well known is the distinctive charm that he gave to a great number of smaller private gardens throughout the state. Of special interest to those active in the arboretum is the fine rock work at the Madison street entrance to the upper road of the arboretum which was designed by Mr. Holmdahl.

In late years there has been a growing trend toward architectural gardens in which plants were of secondary importance but Mr. Holmdahl would have none of this, he was a strong exponent of gardens for gardeners. Indeed, he felt that many of the modern concepts were not gardens at all, outdoor living rooms, perhaps, but not gardens. He accepted such developments as a plausible answer in problem areas where the exigencies of the climate make the cultivation of plants extrmely difficult, but in the horticultural paradise of the northwest, he could see no place for them.

He felt that our gardens should, first of all, be northwest gardens, in harmony with the lush beauty of our natural landscape. He made extensive use of mossy logs and large twisted roots as a kind of natural garden sculpture but they were always an integral part of the planting plan so that they looked as though they might have occured naturally with the plants in the stellar role. His idealized concept of the natural

landscape garden was a place of seclusion, a place to rest, a place to refresh the spirit in intimate contact with nature.

It was always his aim to make an enthusiastic gardener of each of his clients for he felt that this was the greatest service that he could give. He once said that if a landscape design were really successfull, it would be so beautiful that the owners would find real pleasure in caring for it and their lives would be enriched accordingly. Maintenance was then no problem. He always had a feeling of great frustration when a garden he had designed became neglected. If he were fortunate enough to have a client who really loved a garden he would double his efforts to find the choicest of plants, the best plan that he could possibly devise. Often he would spend uncounted hours on the garden of a young couple with a limited budget because he felt they really cared about it. Sometimes, he would discard a completed plan and start over if it were aesthetically unacceptable to him. To his associates he was a hard task-master—to win a word of approval was not easy.

A trip thru a nursery with Mr. Holmdahl was a real experience. All the plants were old acquaintances to him and he would trail his hand in their foliage as he walked along talking of their virtues and shortcomings and uses in the landscape picture. In making his selections of the plants he would use, he would examine them with great care. He would study the growth habit and the range of sizes available so that they would compliment each other and when they were planted they would look as though they had been there always. If the client's budget permitted, he would use the largest plants that he could find. They gave the garden an immediate maturity and beauty which would not change greatly since their growth patterns were already established. He felt that the large plants were more economical in the long run.

We in the northwest are indebted to Mr. Holmdahl for much that is beautiful. His lifelong striving for excellence in his chosen field will be sorely missed. E. Berry

A Professional Horticultural Exploration of British Isles

(*Continued from Page 29*)

of further south was very striking. Even so, most of the houses no matter how soot-begrimed had a small garden with a few roses, a lupine bed or a collection of delphinium.

Traffic was thick and our coach was slowed to the point where we were very late for our next stop, the National Trust, property of Tatton Park in Cheshire. This was one of many large estates turned over to the nation, along with an endowment to guarantee maintenance and upkeep, and it is now used as a county park. It contains about 2,000 acres of which some sixty is in garden, a very fine old Georgian home, extesive greenhouses, walled gardens, gazebos, and all the other appurtenances of a large country estate. The grounds had been laid out by Humphrey Repton some one hundred and fifty years ago. The present staff is making every effort to follow Repton's plans and keep the grounds as he had planned. The views from the house were very fine and the weather was good, but on the warm side. A more modern section of the garden contained a very good collection of species and hybrid *Rhododendron*, some 600 in all, and even a few that were flowering. I noticed especially *R. Keysii*, a few *R. discolor* and something very similar to *R.* 'Azor'. Most of the plants were labeled and the staff was obviously trying to see that all had names, a major task.

In a boggy piece of ground we found a very charming Japanese garden, probably sixty years old or more, which had been nearly lost to neglect but which now was being recovered. Despite the interest I had in the rhododendrons, the Japanese Garden, and in the very fine tree collection, I found that I was being drawn back to the fantastic views planned and executed by Repton. It was plain that the position of each grove of trees, the curve of the lake and the position of the ponds had been carefully thought out and the vista points from the

higher ground around the house were chosen to emphasize certain features of the landscape. I had seen the same thing in our own Japanese Garden but there the scale is three acres, not a thousand!

We left Tatton Park in the early evening and after a short drive arrived in Liverpool, a grimy city of about a million to which I took an instant dislike. As in Peterborough and Nottingham we had a railroad hotel—filthy black on the outside, clean and comfortable inside.

(To be continued)

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The Fuchias

The pride and joy of my garden are the hardy Fuchsias. I know of no other plant that blooms from early summer until cold weather slows down growth in November or December. This year because of the unusually mild winter, there were still blossoms in January on out-door plants.

Fuchsias are indigenous to climates similar to our temperate Pacific Northwest, and there are many lovely varieties that survive our winters outdoors with a minimum of care. A mulch of ground bark, sawdust, or even leaves will suffice to protect the roots, if the plants are propertly prepared. One essential is good drainage, as Fuchsias will not tolerate "wet feet".

Because of the fact that there is no root disturbance plants left in the ground attain unbelievable proportions. "Santa Cruz" last year was over five feet tall and as wide across, with beautiful thrifty foliage, literally dripping with pendant crimson blossoms. "Regal", after winters like this one, has attained a height of seven or eight feet, its single red and blue blossoms are a joy to behold. Macrostemma Alba is one of the original species with pale green small foliage and infinitesimal pale pink and white blooms. Adorable is the word, although not as showy as some others!

"Sunshine" is a lovely salmon pink, with wine colored stamens and anthers. Although usually grown in a container, it has been in the ground for fifteen years, and although it has seen some cold winters has never failed to put forth a colorful display in mid-summer and on until frost. "Display" lives up to its name with myraids of deep rose blossoms, and "Senorita", a mass of red and blue blossoms, attracts honey bees by the dozens. An added bonus for the Nature Lover, is the occasional visit of the gorgeous hummingbirds, for fuchsias are one of *their* favorite flowers too, and while

they sip nectar they also consume quantities of insects.

What a thrill it is to stroll in the Arboretum in the Spring, when the Azaleas, Rhododendrons, flowering Cherries and Magnolias bloom. The whole area is aglow with color rivalling a Puget Sound sunset. Later though, there are times when a little added color would surely be welcome. This is the time when fuchsias could supply that color.

Mary B. (Mrs. Bert) Swift

New Magnolia Flowering in Arboretum

(*Continued from Page 37*)

a remarkable spectacle each March. It can be seen from Arboretum Drive both from the north and east when in bloom.

The other plant mentioned at the beginning of this note, *M. Campbellii* subspecies *mollicomata*, is growing well and has now attained 22 feet in height, but may not flower for another two or three years. The flower color may vary from near white to Fuchsia-Pink or purple. It is native to the eastern end of the Himalaya range, into S. E. Tibet and S. W. China. *M. Campbellii* is found generally further west, from E. Nepal through Sikkim to N. Assam. *M. Sargentiana* var. *robusta* was originally found and introduced by Dr. E. H. Wilson from the mountain Wa-Shan in W. Szechuan, China, in 1908. It is likely to prove one of the most beautiful flowering trees we can grow along the Pacific coastal strip.

BOOK REVIEWS

How Trees Help Your Health by Muriel W. Sweet. Illustrated by Jane Judd. 64 pp.—40 pen and ink sketches. Naturegraph Publishers, Healdsburg, California, 1965—$1.00.

The author points out that while much has been written about the health-giving properties of plants in general, little has been written about the contributions made by trees. She has described thirty trees which she feels have been of significant medical importance over the years. A general description of each species is given (sometimes this includes several varieties) together with its habitat. This is followed by an explanation of the medicinal properties of the bark, wood, roots, leaves, blossoms and/or fruit. Some of the uses listed are "old-fashioned remedies" and one wonders about their use in modern day medicine. However, as the author points out, she gives an account of uses both at the present time and in the past.

No attempt has ben made to give a complete listing of all useful trees. "This," the author states, "would be a large undertaking and also a bit tedious reading." To this reviewer, and I am sure to anyone else from the Northwest, there is a serious omission, namely, Cascara **(Rhamnus purshiana).**

A complete index giving the names of diseases and body parts listed in the book is included in an appendix.

Gordon D. Marckworth

Sunset Western Garden Book—1967 edition. Lane Magazine & Book Co., Menlo Park, California. $5.95.

This is not only larger in size but also in pages—448, as compared to 384 in the 1954 edition. Its entire contents have been "freshly researched".

The 24 western climate zones are shown in good detail on 10 maps. The section on how to grow plants contains valuable information on planting, pruning, pests, propagating, etc. A new "green section" called Plant Selection Guide has suggestions for basic and special landscaping situations, color, fragrance, and problem areas.

There is an excellent glossary of gardeners' language and encyclopedia of more than 5000 plants listed by both botanical and common names.

A "must" for the beginner to the pre-expert. (An expert is someone who realizes he will never be above learning!)

M. W. B.

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Planting Along Washington Highways

(*Continued from Page 32*)

such as Sugar Maple, Norway Maple, and of course the native Vine Maple. Other deciduous trees often considered in urban areas because of size and tolerance have been the Plane tree, Thornless Honeylocust, and varities of Oaks and Birches when the occasion arises.

Often along the urban freeways, portions of the right of way lend themselves to access by pedestrians from city streets and sidewalks. The design and selection of plant materials in these areas are oriented to pedestrian traffic where the more detailed characteristics of the plants, such as the foliage, growth habit and color of flowers can be enjoyed at a more leisurely pace. Under these conditions, varieties of Rhododendrons, Azaleas, Flowering Dogwood, Cherries and other plants are considered.

Rural landscape development of our highway places the emphasis on conservation of existing vegetation and natural features. Where it is necessary to remove existing material to accommodate construction, the planting effort is directed towards replacing it and augmenting any remaining plant material. The practical application of planting to create crash barriers, headlight screens, and screening of unsightly objects still remains a primary consideration and can be accomplished within the informal planting layout. Adequate right of way with a generous retention of natural vegetation is much more important than extensive plantings to create a transition from the roadway to the existing topography.

Plantings under rural conditions are much simpler with fewer varieties of plants selected. Most of this planting is carried out through the informal grouping of trees. Natural revegetation of desirable species is encouraged wherever it is practical.

Plant selection depends primarily on native plants such as Shore Pine, Douglas fir, Coast Hemlock, Lawson Falsecypress, and similar conifers. Deciduous trees may include the Western Paper Birch, Pacific Dogwood, Vine Maple, and Sugar Maple in lieu of the native Bigleaf Maple. Of the native shrubs most used in rural areas, we have the Oregongrape, Salal, and Snowberry along with such non-native plants as varieties of Broom and Japanese Rose. Without question, there are many desirable native trees and shrubs adaptable to highway conditions which as yet we have not specified. When native plant material is specified on planting contracts, we do permit their collection from the natural environment provided they are grown for one year under nursery conditions prior to planting on the project.

Growing conditions for plants along our highways are often far from what would be considered ideal conditions. Subsoils exposed by highway construction are sterile and go from one extreme to the other in permeability. Ground water may flow from cut slopes for several years after construction and then slack off or stop altogether creating a completely different growing condition from that originally planned. Cuts and fill slopes along with retaining walls and overhead structures create microclimatic conditions easily overlooked that could mean success or failure for plantings in that particular location.

Turf must also be considered as a part of the highway landscape program, providing protection against erosion and creating a transition from the travelled traffic lanes to the existing topography. Large areas placed in turf not only provide economy at time of installation but are also economical to maintain, while at the same time adding a continuity to the roadside.

Present and future highway projects are and will be given consideration for roadside planting as part of the highway construction and landscape development program throughout the State. We have learned much the past few years regarding the design and selection of plantings along our highways and anticipate expanding this knowledge in the future.

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